

NOTES ON THE ALOES OF SOMALIA.

By G. W. REYNOLDS.

(With Plate V.)

Five species of Aloe have been described from Somalia. They are: *A. ambigens* Chiov., *A. microdonta* Chiov., *A. defalcata* Chiov., *A. Stefaninii* Chiov., and *A. Ellenbeckii* Berger. Of these, there are no published figures.

Four species described from elsewhere, but recorded as occurring in Somalia, are: *A. Ruspoliana* Bak., *A. Pirottae* Berger, *A. trichosantha* Berger, and *A. macrocarpa* Tod. Berger has figured leaf margins, perianths with pedicels and bracts of the first three, while Todaro figured a whole plant of *A. macrocarpa*.

From the study of descriptions, some of which are vague and incomplete, and from photographs of such type material as was available, it soon became clear that nothing short of a personal visit to cited type localities would ever enable me to solve the puzzles and establish the identity of the species, or at least to attempt it.

In company with Mr. P. R. O. Bally, botanist, Coryndon Museum Nairobi, I visited Somalia during September and October 1953, for the express purpose of investigating the Aloes. We entered Somalia from Ethiopia at Dolo and travelled to Lugh Ferrandi, Iscia Baidoa, Bardera, down the east side of the Juba River to Gelib, Margherita and Kismayu, thence up to Brava, Merca, Afgoi, Mogadishu, and as far north as Bullo Burti. We had hoped to visit Obbia and further afield, but the nearness of the rainy season, and the danger of being cut off and stranded, compelled us to turn back at Bullo Burti. Returning to Kismayu, we travelled via Beles Cogani (Somalia) to Liboi (Kenya) and to Garissa and Nairobi.

During these travels numerous habitat photographs of *Aloe spp.* were taken; many descriptions were written up on the spot, variation studied, and the distribution of the various species carefully recorded. Specimens were prepared and sent to the National Herbarium Pretoria, with duplicates for Kew, while a number of living plants were sent to Johannesburg for further study. The following is a list of the reported Somalia species, together with an opinion concerning them, and distribution as observed:

(1) *A. microdonta* Chiov. in *Plant. Nov. Ethiop.* 1: 7 (1928), in *Fl. Somalia* 1: 315 (1929). "Somalia Merid. Between Genale and Audegle. 7 Feb. 1924 (Puccioni et Stefanini n. 49)."

Genale and Audegle are agricultural settlements on the Webi Shebeli River, S.W. of Afgoi, the type locality being ca. $1^{\circ}52'N.$, $44^{\circ}47'E.$ Considerable quantities of plants fitting the description and matching photographs of the type material were found in this neighbourhood, in fact, it was eventually found that *A. microdonta* enjoyed the widest distribution, and occurred in the largest numbers, of all the Aloes seen in Somalia. It was frequently observed planted on Somali graves, and used for demarcating boundaries of fields. It also appears to be confined within the boundaries of Somalia, and was found mostly on grey limestone rubble and soil, in partial shade.

Distribution. 62, 64—67, 70—73 miles S.E. of Lugh Ferrandi; 50 miles S.W. of Iscia Baidoa; 14 miles N.E. of Bardera; repeatedly along the 200 miles southwards from Bardera to Gelib and Margherita at alt. 350 ft.—50 ft.; on the Gelib-Modun road (turn off for Brava) occurs at miles (from Gelib) 76, 80, 84, 95—102; Goluin 12 miles S.W. of Vittoria d'Africa; in considerable numbers, almost continuously from 30 miles S.W. of Afgoi up to Afgoi, the type locality being somewhere in this area; 3 miles W. and N. of Mogadishu; 7, 10—20 miles N. of Villaggio Duca d'Abruzzi (65, 68—78 miles N. of Mogadishu); 26 miles S. of Bulu Burti (116 miles N. of Mogadishu) alt. 400 ft. Probably also occurs further north-east. Trans Juba: 21, 76, 84 miles N.W. of Kismayu; at mile 89 (3 miles west of Beles Cogani Italian Customs) and at mile 117 (25 miles W. of Beles Cogani, *A. microdonta* meets and crosses with *A. rabaiensis* Rendle in large numbers. Western limit appears to be long. $41^{\circ}25'E.$, with the southern limit about lat. $0^{\circ}05'N.$

Since Chiovenda described this species *Habitus ignotus*, an abridged description follows:

Stem slender, short or up to 1 met., procumbent with the apical portion foliate and ascending, with shoots at random low down and forming small to large dense groups sometimes several metres across.

Leaves about 16, rosulate, 50—70 cm. long, 9—11 cm. broad near base when pressed flat, gradually tapering to the apex, spreading and much recurved with their apices pointing downwards; *upper surface* deeply canaliculate, dull green to olive-grey; *lower surface* rounded; *margins* armed with minute whitish teeth which are pale brown tipped, 1 mm. (rarely more) long, about 10 mm. distant, the interspaces straight and the colour of the leaf. *Sap* dries yellow.

Inflorescence a slender much branched panicle 1—1.3 met. high, with 8—12 spreading branches, the lowest with 2—4 branchlets. *Racemes* oblique, 10—15 cm. long, laxly flowered, the red flowers more or less secund. *Bracts* minute, 2—3 mm. long. *Pedicels* 5—6 mm. long. *Perianth* scarlet, cylindric-trigynous, 23 mm. long; *outer segments* free for 10 mm.

Anthers exerted 3 mm. *Stigma* exerted 5 mm. *A. microdonta* is separated from its nearest allies in the section *Aethiopicae* by its paniculate inflorescence having spreading branches with laxly flowered racemes of secund red flowers. (Plate V.)

(2) **A. Ruspoliana** Baker in *Fl. Trop. Afr.* 7: 460 (1898); Berger in *Pflanzenr. Liliac-Aloin* 266 (1908).—"Somaliland: Ogaden, at Mil Mil and Imi, Riva 918, 9 Jan. 1893."

Mil Mil is in the Harar Province of Ethiopia, Ogaden, between Auareh (Awareh) and Dagabur (Daggah Bur), south of Hargeisa, at ca. 8°15'N., 43°55'E. Imi lies some 180 miles to the south-west. I was unable to visit Mil Mil, but from the description and photographs of the type there can be no mistaking this most distinctive species, which appears to be the second commonest Aloe found in Somalia.

A. Ruspoliana is distinguished by its *leaves* having minute marginal teeth only $\frac{1}{2}$ mm. long, a paniculate *inflorescence* 1—1.3 met. high, branched above the middle with 12 and more branches, the lowest rebranched; *racemes* short, capitate, densely flowered; *pedicels* 5 mm.; *perianth* yellow, 16—20 mm. long, obtusely tapering at base, wider at mouth than at base. It usually has a short procumbent or erect stem, and forms dense groups sometimes a few metres across.

A. Ruspoliana occurs in the Ogaden, Ethiopia, and is recorded from Habr Anal, west of Obbia, in Northern Somalia. From personal observation, it occurs 6 miles S. of Bulo Burti (130 miles N. of Mogadishu) at 550 ft.; 47 miles S. of Bulo Burti; 3 miles S. of Afgoi; 43 and 28 miles N.E. of Vittoria d'Africa; at Modun, 85 miles S.W. of Merca; 120—130 miles S. of Bardera; 23 miles N.E. of Bardera; 12 miles S.W. of Ischia Baidoa; 18 miles S.E. of Lugh Ferrandi; and near Dolo.

In Kenya, *A. Ruspoliana* occurs in masses 57 miles west of Garissa, southwards to near Lugard's Falls and near Voi 95 miles inland from Mombassa, which appears to be its southern limit.

I have seen flowering plants of *A. Jex-Blakeae* Christian, from the type locality, Horr Valley east of Lake Rudolph, Kenya, and cannot separate them from *A. Ruspoliana*. Reasons are given below for sinking *A. Stefaninii* Chiov. The synonymy should now read:

A. Ruspoliana Bak. in *Fl. Trop. Afr.* 7:460 (1898); Berger in *Pflanzenr. Liliac-Aloin* 266 (1908).—*A. Stefaninii* Chiov. in *Result. Sci. Miss. Stefani*. 1: 171 (1916).—*A. Jex-Blakeae* Christian in *Journ. S.A. Bot.* 8: 176 (1942).

(3) **A. Stefaninii** Chiov. in *Result. Sci. Miss. Stefani* 1: 171 (1916).—"Somalia Merid.: near Hemin-Gurei, 22 July 1913, (Paoli n. 687)."

Heima and Gurei are wells to the east of Anole Hill (which hill is about 25 miles south of Bardera on the east side of the Juba River) on the bush-clad Agiuran plains at approx. 1,000 ft. I could find no track leading eastwards from Anole, and could not visit Heima, but I have been on the same Agiuran plains to the north, and there found many plants of *A. Ruspoliana* 25 miles north-east of Bardera. The only details of leaves given by Chiovenda are "According to the collector, similar to n. 600 *A. Ruspoliana* Baker." A photograph of the type, which is in Florence, and which comprises a dried inflorescence only, without leaves, is clearly that of *A. Ruspoliana*. The description is also that of *A. Ruspoliana* except that the flowers are described as 13—14 mm. long against the usual 16—20 mm. Flowers vary in length in different localities, also on soils and rainfall. In my view *A. Stefaninii* is a form of *A. Ruspoliana* with flowers a little shorter than usual, and should be reduced to synonymy under *A. Ruspoliana*.

(4) *A. defalcata* Chiov. in *Fl. Somalia* 2: 424 (1932).—"Oltregiuba: near Uar Sceek (Dr. R. Guidotti 1931 n. 64)."

Prof. Pichi-Sermolli recently wrote to the collector enquiring where Uar Sceek was, and Dr. Guidotti replied that he "thinks with great uncertainty that Uar Sceek is in the Oltregiuba, along the right bank of the Giuba River, between Dugiuma and Belet-Amin." Mr. E. Milne-Redhead informed me that Dugiuma was about 55 miles north of Gelib, and Belet-Amin about 23 miles south of Gelib. In September 1953, I travelled from Bardera to Dugiuma, Hele Scid and Gelib to Margherita searching for plants fitting the description of *A. defalcata*. I found considerable quantities of *A. microdonta* with deeply channelled much recurved leaves and a paniculate inflorescence with spreading branches, laxly flowered oblique racemes of red secund flowers. I also found lesser numbers of *A. Ruspoliana* which has suberect leaves with minute teeth and an inflorescence of capitate, densely flowered racemes of yellow flowers 15—20 mm. long. In no localities could I find plants with deeply channelled "extremely arcuate deflexed" leaves, combined with short dense racemes with 15—20 mm. yellow flowers. It then became obvious that the leaves of *A. microdonta* had been mixed with the flowers of *A. Ruspoliana*, and that *A. defalcata* as described was a mixture of species, and could not be upheld.

(5) *A. ambigens* Chiov. in *Plant. Nov. Ethiop.* 1: 6—7 (1928).—"Somalia Media: Sultanate of Obbia, between Attodi and Dolobscio, 26 April 1924. Puccioni et Stefanini n. 447 (499)." I cannot trace Attodi, but Dolobscia is shown on one map as lying west of Obbia at approx. 48°15'E., 5°20'N.

Chiovenda described this species with "Habit of growth and leaves unknown," notwithstanding which he cites *A. lateritia* Engler as an affinity in the sect. *Saponariae*. Until plants at the type locality can be examined, *A. ambogens* will remain a *species non satis cognita*.

(6) **A. Ellenbeckii** Berger in Engler *Bot. Jahrb.* 36: 59 (1905), in *Pflanzenr.* Liliac-Aloin. 216 (1908).—"South Somaliland: In bush at Fereschit. Dr. Ellenbeck n.2340, 6 July 1901."

"Habit of growth unknown. Leaves erect? Scape branched it seems. A peculiar species but imperfectly known. Placed in sect. *Saponariae* on account of the shape of the perianth, leaves slender, minutely dentate, almost as in the sect. *Macrifoliae*."—Berger. This suggests that the leaves may be near those of the Cape species *A. striatula* Haw.

Fereschit was not traced on any map, and possibly, due to difficulties of pronunciation and transliteration, it was thought that Hele Scide 9 miles west of Bardera might have been the place. Ellenbeck appears to have been in Bardera on the Juba River on 2 July 1901, and his n.2340 is dated 6 July 1901, which suggests a locality not far from Bardera. On 29 Sept. 1953, I journeyed to Bardera, crossed the river and proceeded westwards to Hele Scide, searching for *A. Ellenbeckii*. The only *Aloe* sp. found in those parts was *A. Pirottae*. Nowhere along the Juba River from Dolo to the sea, and nowhere else in Somalia could I find any species which could be included in the sect. *Saponariae*. *A. Ellenbeckii* it seems, will remain a *Species non satis cognita*.

(7) **A. Pirottae** Berger in *Bot. Jahrb.* 36: 65 (1905), in *Pflanzenr.* Liliac-Aloin. 266 (1908); Chiovenda in *Result. Sci. Miss. Stefani.* 1: 171 (1916) excl. fig. 24D.—"Somaliland: Savati, River Lagonomi, on dry stony places. Riva 1682, 25 March 1893."

After travelling from Berbera and Hargeisa to Mil Mil and Imi, Riva reached the Webi Gestro, and Dolo in March 1893. He was in Dolo at least until 16 April 1893. Riva 1682 is dated 25 March 1893, which implies that "Savati, River Lagonomi" would be somewhere near Dolo.

I visited Dolo in September 1953 in the hopes of finding the type locality, but the name could not be traced on any map, while Somalis of the Desert Locust Control there, who claimed to know every inch of the country thereabouts, had never heard of Savati or a River Lagonomi, and my quest was in vain.

Chiovenda (1c.) cites Paoli n.590 from between Mansur and Availe, which is on the east side of the Juba River, south of Bardera. I passed by Mansur and found *A. Pirottae* nearby, also *A. microdonta*. Chiovenda (1c.) also lists "*Aloe* verisimiliter *Pirottae*", while tab. 24 Fig. D, is a

photo by Scassellati and Mazzocchi of "*Aloe Pirottae* Baker?" from "Mugnica on the Juba, 8 Jan. 1912". The author was Berger not Baker, while the three flowering plants figured, (held up by three Somalis), with long stems, channelled recurved leaves and oblique racemes are clearly *A. microdonta*, which is in all ways different from *A. Pirottae*.

Berger described the species "*Habitus ignotus*" but he gives a good description of leaves and inflorescence. I found *A. Pirottae* almost invariably under thorn bushes, with the inflorescence (dry in September) entangled in the branches of thorn bushes, rarely solitary, usually in groups of 3—6 plants. The following was noted:

Plants acaulescent. *Leaves* 12—16, subtrifarious in younger plants, more rosulate in adult specimens, 45—60 cm. long, 8—9 cm. broad at base, gradually narrowing to the apex, spreading and recurved, rather canaliculate; *upper surface* mostly chocolate-brown (in the dry season), copiously marked with dull lenticular spots throughout; *lower surface* rounded, paler in colour than upper surface, copiously spotted throughout; *margins* armed with deltoid whitish horny teeth which are pale brown tipped, 2—3 mm. long and 10 mm. apart near base, gradually smaller and more distant upwards, obsolescent towards apex. *Sap* dries deep brown. *Inflorescence* a slender panicle 1—1.2 met. high, with 5—9 branches from above the middle. Not flowering anywhere in September, but from dried remains: *Pedicels* 6 mm. long, *Bracts* 3—4 mm. long, 3 mm. broad, 3—5-nerved. *Racemes* laxly flowered, the terminal 12—15 cm. long, lateral 8—10 cm. long. Flowers not seen. Dehiscent capsules 15 mm. long.

Distribution. 42 miles S.E. of Lugh Ferrandi, 1,000 ft.; 50 miles S.W. of Ischia Baidoa, 1,200 ft.; 9 miles N.E. of Bardera 500 ft.; 6 and 12 miles W. of Bardera, 450 ft.; on the road from Bardera southwards to Gelib, at miles 6, 12, 18, 32 (250 ft.), 65 (200 ft.); 1 mile N. of Margherita. Not seen between Gelib and Mogadishu, but recorded as occurring near Afgoi; 91 miles N. of Mogadishu on road to Bullo Burti.

(8) *A. trichosantha* Berger var. *albo-picta* Schweinf. Chiovenda records *A. trichosantha* from hills near Biobahal, north-east of Bardera, (Paoli n. 1049), but, it seems this should be referred to the var. *albo-picta*. Certain plants which I have seen at the following localities should, it seems, be referred to *A. trichosantha* var. *albo-picta*.

Somalia: 30 miles S.E. of Lugh Ferrandi, 900 ft.; on the road from Mogadishu northwards to Bullo Burti, seen at miles 68 (300 ft.); 91, and 106; abundant from 1—5 miles south of Bullo Burti, which is 132—136 miles north of Mogadishu, at 400 ft., on light grey soils. (It may be noted

here that in Southern Ethiopia, on the Yavello-Neghelli road, plants were observed 32 miles west of the Daua Parma River in some numbers at 3,250 ft., and east of that river at miles 5, 8, 10, and 21 at 2,800—3,160 ft.)

Abridged description: Plants acaulescent, larger when solitary, smaller when in groups from shoots from base. Leaves 16—18, densely rosulate, erectly spreading, lanceolate-attenuate, up to 60 cm. long, 12 cm. broad at base, 15 mm. thick in the dry season; upper surface flat low down, canaliculate upwards with the apical quarter twisted, brownish-olive with a grey-bluish waxy bloom, with numerous small to large pale-greenish lenticular markings, some of which reach 2—3 cm. long and 7 mm. broad at the middle; lower surface rounded, browner than the upper surface, heavily bloomed and with numerous lenticular markings throughout; margins slightly thickened, armed with 2 mm. teeth which are pungent and reddish-brown in upper half only, the base and interspaces more or less cartilaginous, 20—25 mm. apart low down, reaching 30—40 mm. apart upwards, the leaf apex rounded and dentate. Sap dries yellow.

The following noted from some dried-out inflorescence still standing: Inflorescence 1.5 met. high, rather compactly 4—6-branched from the middle or higher. Pedicels of dehiscent capsules 8 mm., with bracts a little longer. Flowers not seen but indumentum on pedicels and branches still visible under a lens. Plants have been sent to Johannesburg to grow for flowers.

(9) **A. macrocarpa** Tod. (Sect. *Saponariae*—Eritrea).

Chiovenda in *Result. Sci. Miss. Stefani*. 1: 13 (1916) identified Paoli 590, from Margherita, as *A. macrocarpa*, but this appears to be wrong. I searched near Margherita, and found numbers of *A. Pirottæ* which has spotted leaves, but is far from Sect. *Saponariae*. A cross of *A. microdonta* with *A. Pirottæ* was seen at Margherita, the leaves of which (but not the procumbent elongate stem) could be mistaken for a species in Sect. *Saponariae*. In no part of Somalia did I find any *Aloe* sp. belonging to the Sect. *Saponariae*. *A. macrocarpa* is an Eritrean species.

SUMMARY.

The *Aloe* spp. occurring in Southern Somalia are *A. microdonta* Chiov., *A. Ruspoliana* Bak., *A. Pirottæ* Bak., and *A. trichosantha* Berger var. *albo-picta* Schweinfurth.

Regarding other species, the position appears to be as follows:

A. Stefaninii Chiov. is a form of *A. Ruspoliana* Bak., and should be reduced to synonymy.

A. defalcata Chiov. is a mixture of species and cannot be upheld.

A. ambigens Chiov. was not found in Southern Somalia.

A. Ellenbeckii Berger was not found along the Juba River, and is a *Species non satis cognita*.

A. macrocarpa Tod. is an Eritrean species, and was not found near Margherita.

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FIG. 1.



FIG. 2.



FIG. 3.

PLATE V.

Aloe microdonta Chiov.

FIG. 1. Plant with dried dehiscent capsules, near Anole, 24 miles South of Bardera, near Juba River, Somalia. Height 1.5 met.

FIG. 2. Robust form, at Margherita, Somalia. Fl. 3 October, 1953. Height 1.5 met.

FIG. 3. Flowers 1/1, from bud to post-pollination stage.